

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 08 OCT 2003

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Applicant's or agent's file reference HCA2EPC-5692	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP02/07248	International filing date (day/month/year) 01.07.2002	Priority date (day/month/year) 27.12.2001
International Patent Classification (IPC) or both national classification and IPC H01Q21/28		
Applicant HARRIS COMMUNICATIONS AUSTRIA GMBH et al.		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>

Date of submission of the demand 20.06.2003	Date of completion of this report 06.10.2003
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Grübl, A Telephone No. +49 89 2399-7138



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**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-10 as originally filed

**Drawings, Sheets**

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

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5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V:**

**1. Documents**

Reference is made to the following documents:

D1: HOPF ELEKTRONIK GMBH: 'Technical Description 8 x GPS Power Splitter 4449" HOPF ELEKTRONIK GMBH, [Online] 21 March 2001 (2001-03-21), XP002220840 Retrieved from the Internet:  
<URL:[http://www.hopf.com/download/manuals/english/4xxx/e4449\\_0100.pdf](http://www.hopf.com/download/manuals/english/4xxx/e4449_0100.pdf)>  
[retrieved on 2002-11-14]

D2: MAKI S C: 'A low-cost GPS inertial guidance (GPSIG) for space boosters' IEEE PLANS '90: POSITION LOCATION AND NAVIGATION SYMPOSIUM RECORD. 'THE 1990'S - A DECADE OF EXCELLENCE IN THE NAVIGATION SCIENCES' (CAT. NO.90CH2811-8), LAS VEGAS, NV, USA, 20-23 MARCH 1990, pages 176-183, XP010001125 1990, New York, NY, USA, IEEE, USA

D3: BULLOCK J B ET AL: 'Test results and analysis of a low cost core GPS receiver for time transfer applications' FREQUENCY CONTROL SYMPOSIUM, 1997., PROCEEDINGS OF THE 1997 IEEE INTERNATIONAL ORLANDO, FL, USA 28-30 MAY 1997, NEW YORK, NY, USA, IEEE, US, 28 May 1997 (1997-05-28), pages 314-322, XP010257454 ISBN: 0-7803-3728-X

**2. Lack of inventive Step**

The application does not meet the requirements of Article 33(3) PCT, because the subject-matter of **Claims 1-10** does not involve an inventive step.

**2.1 Independent Claim 1 relates to an obvious and consequently non-inventive combination of features.**

A GPS signal splitter in accordance with the pre-characterising portion of Claim 1 is known from document D1 (see D1, page 4). The subject-matter of Claim 1 differs from D1 in that

- a second GPS antenna is combined with the passive antenna splitter through an amplifier for parallel feeding and that
- a DC driver stage provides the supply voltage for the GPS antennas and the amplifiers.

The technical problem to be solved by the subject-matter of Claim 1 consists in preventing failure of a system requiring GPS antenna signals in case of a GPS

antenna breakdown.

To solve this problem, it is commonly known to use redundant elements. Thus, adding a second antenna is an obvious solution.

Adding a second GPS antenna involves for a skilled person also the usual step of providing an appropriate power supply and power control for this antenna. It is common knowledge, that such an antenna needs an appropriate power supply, otherwise the antenna would not work at all. Therefore, the subject-matter of Claim 1 is not inventive.

Furthermore, document D2 discloses a GPS receiver system which is made failure-tolerant by redundancy of its elements (see D2, page 180, figure 1, "Four antenna configuration") as well as the connection of a GPS antenna with an antenna splitter through an amplifier (see D2, page 180, figure 1, "Two antenna configuration"). Hence, given the common knowledge of a skilled person regarding the need of an appropriate antenna power supply, the subject-matter of Claim 1 is not inventive over the combination of documents D1 and D2.

As an example for an commonly known GPS antenna power supply attention is drawn to document D3 (see D3, page 319, "Antenna Power Supply"), which has means for detecting overcurrent and which switches off the power supply of the antenna depending on the operation condition (see D3, page 320, line 6 f.).

**2.2 The dependent Claims 2-10 do not seem to contain subject-matter contributing to an inventive step.**

The power splitter of D2 has the same number of outputs as the splitter of **Claim 2**.

**Claims 3-8** relate to further features of the DC driver stage. These are just normal design measures applied in the process of product development and thus do not involve an inventive step.

Protecting an electronic assembly connected to an antenna with a lightning protection filter (**Claim 9**) as well as using a high-pass filter with a trap at the half frequency to be amplified (**Claim 10**) is just a normal design measure.

**3. Remarks**

The application as a whole does not seem to contain any subject-matter involving

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an inventive step. Should the applicant nevertheless wish to proceed with the application, the following matters require attention:

- 3.1 **Claim 1** is not supported by the description. While the description refers to an GPS antenna splitter to be connected to numerous GPS antenna signal inputs of broadcast transmitters, Claim 1 refers to "GPS outputs of transmitters".
- 3.2 The feature "amplifier" following the expression "possibly" in **Claim 1** is regarded as entirely optional and does not have any limiting effect on the scope of the claim. Care should be taken not to introduce ambiguity.
- 3.3 The "change-over withstand stage" mentioned in **Claim 6**, is not disclosed in the description. It is assumed, that the "change-over withstand stage" should relate to the "change-over and holding stage" and thus be named also "change-over and holding stage".
- 3.4 According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of the same reference signs in **Claims 1 and 9** for the different features GPS output and GPS antenna.
- 3.5 The expression "regular [...] short-circuit" should not be placed between parentheses (Rule 6.2(6)) PCT).
- 3.6 Reference signs "OPA 47", "MOS-FET 47" and "MOS-FET 80" used in **Claims 4, 5 and 7** are not contained in the drawings. Reference sign "47" is not an operational amplifier.
- 3.7 The abbreviation "OPA" in **Claim 5** is not defined.